



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of

Takeshi Kamio, et al.

Serial No.: 09/987,404

Group Art Unit: 1731

Filed: November 14, 2001

Examiner: John M. Hoffman

For: METHOD FOR SINTERING POROUS-GLASS MATERIAL, AND METHOD FOR
MANUFACTURING PREFORM AND OPTICAL FIBER

DECLARATION UNDER 37 C.F.R. § 1.132

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

We, Takeshi Kamio and Makoto Yoshida, hereby declare and state:

THAT we are citizens of Japan residing at Gunma-ken Japan;

THAT we graduated from Science University of Tokyo, and Kobe University,
receiving a Bachelor Degree of Chemistry of Industry, and Master Degree of Chemical Science
and Engineering, respectively;

THAT we are familiar with the Office Action dated September 7, 2006, where the
Examiner asserted that Claims 1, 3-7 and 21-25 are rejected in view of U.S. Patent No. 5,306,322
to Ishikawa and that Claims 8, 10-15 and 17 are rejected in view of Ishikawa and U.S. Patent No.
5,306,322 to Antos. In particular, where the Examiner maintains that the claimed range for the
outer diameter (d) of the porous-glass material recited in independent claims 1, 8 and 15 is
obvious in view of Ishikawa;

THAT we are co-inventors of the above-identified application;

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With respect to the range recited in the claimed invention, we state and declare that in accordance with the test results shown in the table below, a glass base material having a low eccentricity error of a core, the value of which is 0.3% or below, can be manufactured in the case where $d/D > 0.5$ (test numbers 1 to 7, namely, claimed range). On the other hand, in the case where $d/D < 0.5$ (test numbers 8 and 12, namely, out of claimed range), a glass base material having a relatively high eccentricity error of core is manufactured.

Applicants submit that this evidence supports the description at page 10, line 32 to page 11, line 3 of the specification as filed, such that the predetermined range of the outer diameter (d) of the porous-glass material may be determined so that an eccentricity error of a core inside of the glass base material manufactured by sintering the porous-glass material (e.g., 12) becomes 0.4% or less.

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| Test No. | d (mm) | D (mm) | L (mm) | d/D (-) | d/L (-) | Eccentricity error (%) |
|----------|--------|--------|--------|---------|---------|------------------------|
| 1 | 320 | 400 | 400 | 0.800 | 0.800 | 0.15 |
| 2 | 280 | 400 | 400 | 0.700 | 0.700 | 0.24 |
| 3 | 260 | 400 | 400 | 0.650 | 0.650 | 0.30 |
| 4 | 240 | 400 | 400 | 0.600 | 0.600 | 0.29 |
| 5 | 220 | 400 | 400 | 0.550 | 0.550 | 0.28 |
| 6 | 210 | 400 | 400 | 0.525 | 0.525 | 0.29 |
| 7 | 200 | 400 | 400 | 0.500 | 0.500 | 0.30 |
| 8 | 190 | 400 | 400 | 0.475 | 0.475 | 0.43 |
| 9 | 180 | 400 | 400 | 0.450 | 0.450 | 0.75 |
| 10 | 170 | 400 | 400 | 0.425 | 0.425 | 0.71 |
| 11 | 160 | 400 | 400 | 0.400 | 0.400 | 0.78 |
| 12 | 150 | 400 | 400 | 0.375 | 0.375 | 0.83 |

Accordingly, Applicants submit that claimed invention, including the claimed range ($0.5 < d/D < 0.9$), can clearly provide tremendous advantages such that a glass base material having a low eccentricity error of a core can be manufactured.

Moreover, with respect to the Examiner's position in the Response to Arguments (e.g., see Office Action dated September 7, 2006 at page 6, lines 1-8), Applicants submit that the

claimed range ($0.5 < d/D < 0.9$) of the claimed invention facilitates a design of a porous-glass material sintering apparatus (e.g., 10; see Figure 5 of Application). Specifically, a size of a diameter (D) of a ring heater (e.g., 9), which is suitable for a size of a diameter (d) of the porous-glass material (e.g., 2) can be calculated based on the claimed range (d/D) to prevent the porous-glass material (e.g., 2) from contacting with the sidewall of the furnace (e.g., 5) ($d/D < 0.9$), and to prevent an eccentricity error of the glass base material from increasing ($d/D > 0.5$).

Thus, the apparatus (e.g., 10) can be miniaturized under the condition that a clearance between the porous-glass material (e.g., 2) and the sidewall of the furnace (e.g., 5) become smaller as much as possible. Accordingly, the claimed range (d/D) of the present invention was not accidentally obtained, but was obtained by performing tests to find out a suitable range capable of preventing the porous-glass material from contacting with the sidewall of the furnace, and capable of preventing an eccentricity error of the glass base material from increasing. Based upon this concept, Applicants submit that the Examiner's position is erroneous.

Therefore, we disagree with the Examiner's allegation that the claimed range for the outer diameter (d) of the porous-glass material recited in independent claims 1, 8 and 15 is obvious in view of Ishikawa.

We declare further that all statements made herein of our own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States

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Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Date: Feb. 7, 2007

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Takeshi Kamio
Mr. Takeshi Kamio

Makoto Yoshida
Mr. Makoto Yoshida